



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

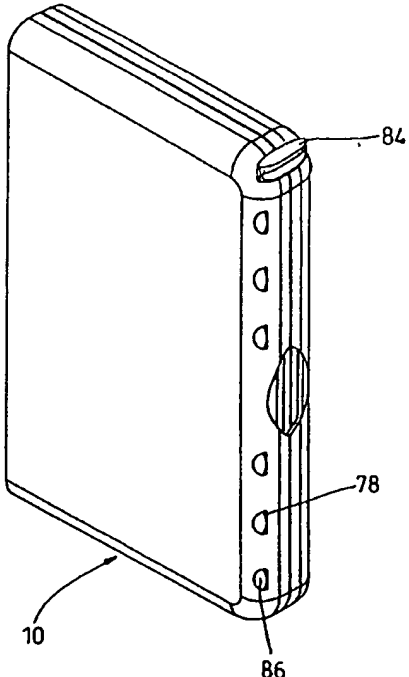
<b>(51) International Patent Classification:</b> <b>G11B 23/02</b>	<b>A2</b>	<b>(11) International Publication Number:</b> <b>WO 00/17877</b> <b>(43) International Publication Date:</b> 30 March 2000 (30.03.2000)
<b>(21) International Application Number:</b> PCT/GB99/03084 <b>(22) International Filing Date:</b> 16 September 1999 (16.09.1999) <b>(30) Priority Data:</b> 9820500.8 22 September 1998 (22.09.1998) GB <b>(60) Parent Application or Grant</b> CARLING POINT LIMITED [/]; (). MARGETTS, Mark, Geoffrey, Newland [/]; (). EATON, Neil, Adrian [/]; (). FISHER, Andrew, William [/]; (). DAY, Simon [/]; (). BAGNALL, Mark, Daniel [/]; (). MARGETTS, Mark, Geoffrey, Newland [/]; (). EATON, Neil, Adrian [/]; (). FISHER, Andrew, William [/]; (). DAY, Simon [/]; (). BAGNALL, Mark, Daniel [/]; (). POWELL, Timothy, J. ; (). ().		<b>Published</b>
<b>(54) Title:</b> STORAGE CASE <b>(54) Titre:</b> BOITIER DE STOCKAGE  <b>(57) Abstract</b> A storage case comprises a top portion and bottom portion adapted to abut each other in a closed position. A locking strip is mounted on an edge of the closed storage case. The top portion and bottom portion receive the locking strip. The storage case comprises formations receivable by said locking member such that said locking member and said storage case is in a locked position.  <b>(57) Abrégé</b> L'invention concerne un boîtier de stockage qui comprend une partie supérieure et une partie inférieure conçues pour s'emboîter l'une de l'autre en position fermée. Une bande de verrouillage est montée sur un bord du boîtier de stockage fermé. La partie supérieure et la partie inférieure reçoivent cette bande de verrouillage. Ce boîtier de stockage comporte des parties saillantes pouvant être reçues par ledit élément de verrouillage, de façon que ledit élément de verrouillage et ledit boîtier de stockage se trouvent en position fermée.		

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<p>(21) International Application Number: <b>PCT/GB99/03084</b></p> <p>(22) International Filing Date: <b>16 September 1999 (16.09.99)</b></p> <p>(30) Priority Data: <b>9820500.8</b>      <b>22 September 1998 (22.09.98)</b>      <b>GB</b></p> <p>(71) Applicant (<i>for all designated States except US</i>): <b>CARLING POINT LIMITED [GB/GB]; Central House, Llanfechain, Powys SY22 6UJ (GB).</b></p> <p>(72) Inventors; and (75) Inventors/Applicants (<i>for US only</i>): <b>MARGETTS, Mark, Geoffrey, Newland [GB/GB]; Carling Point Limited, Central House, Llanfechain, Powys SY22 6UJ (GB). EATON, Neil, Adrian [GB/GB]; Carling Point Limited, Central House, Llanfechain, Powys SY22 6UJ (GB). FISHER, Andrew, William [GB/ZW]; Bulawayo Polytechnic, Mechanical Engineering Division, P.O. Box 1392, Bulawayo (ZW). DAY, Simon [GB/GB]; Pera International, Technology Centre, Melton Mowbray, Leicestershire LE13 0PB (GB). BAGNALL, Mark, Daniel [GB/GB]; Triple Link, 410 North Road, Yate, Bristol BS37 7LW (GB).</b></p> <p>(74) Agent: <b>POWELL, Timothy, J.; Eric Potter Clarkson, Park View House, 58 The Ropewalk, Nottingham NG1 5DD (GB).</b></p>	<p>(81) Designated States: <b>AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).</b></p> <p><b>Published</b> <i>Without international search report and to be republished upon receipt of that report.</i></p>	
<p>(54) Title: <b>STORAGE CASE</b></p> <p>(57) Abstract</p> <p>A storage case comprises a top portion and bottom portion adapted to abut each other in a closed position. A locking strip is mounted on an edge of the closed storage case. The top portion and bottom portion receive the locking strip. The storage case comprises formations receivable by said locking member such that said locking member and said storage case is in a locked position.</p> 		

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STORAGE CASE

5 This invention relates to a storage case. More particularly but not  
10 exclusively this invention relates to a lockable storage case for use with  
5 video tapes, compact discs, cassettes, computer games etc.

15 It is known to provide the cases of saleable items such as videos and  
compact discs with security devices to attempt to dissuade a potential thief  
from stealing. Such devices include plastic clips which may only be  
10 removed by a tool at the cashiers desk. These devices tend to be bulky  
20 and inhibit attractive display of the products.

25 A large number of retailers display only the cases of the products and  
store the actual products e.g. videos, in a secure location only accessible  
15 by store personnel. However, this requires more retail space and is time  
consuming when a customer wishes to make a purchase.

30 Another security device is a label which activates a security system when  
the product, to which it is applied, passes through the exit of the store.  
35 Such labels may, however, be easily peeled off the product.

40 An object of this invention is to provide an improved security system  
which attempts to alleviate the aforementioned problems.

25 According to the invention there is provided a storage case comprising a  
top portion and a bottom portion adapted to abut each other in a closed  
45 position, at least one edge of both said top portion and bottom portion of  
said storage container being formed with receiving means for receiving a  
detachable locking member in said storage case closed position.  
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Also according to the invention there is provided a storage case comprising a top portion and bottom portion adapted to abut each other in a closed position, a locking member being mounted on at least one edge of said closed storage case, said top portion and said bottom portion being adapted to receive said locking member wherein at least one of said storage case, top and bottom portions comprise formations receivable by said locking member such that said locking member and said storage case is locked.

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In a storage case in accordance with the invention the locking member is releasable but it is intended that the locking member can only be readily released to unlock a locked storage case by use of a special tool. It is intended that such a tool will be available only to those authorised to have access to the contents of the storage case.

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An embodiment of the invention will now be described by way of example with reference to the accompanying drawings in which:

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Figure 1 is a perspective view of an embodiment of a storage case with the locking spline removed;

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Figure 2 is another perspective view of a locking spline for use with the storage case of the invention shown in Figure 1;

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Figure 3 is a perspective view of the storage case shown in Figure 1 of a storage case with the locking spline in the locked position;

Figure 4 is a perspective view of a storage case according to another embodiment of the invention;

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Figure 5 is a perspective view of the locking spline of an embodiment of the invention as shown in Figure 4;

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5 Figure 6 is a perspective view of a lockable storage case in accordance with a further embodiment of the invention;

10 Figure 7 is a perspective view of the locking plate for use with the lockable storage case of Figure 6;

5 Figure 8 is a perspective view of the lockable storage case of Figure 6 with the locking plate of Figure 7 in the locking position;

15 Figure 9 is a perspective view of a lockable storage case in accordance with another embodiment of the invention;

10 Figure 10 is a perspective view of the locking plate for use with the lockable storage case of Figure 9;

20 Figure 11 is a perspective view of a lockable storage case according to a further embodiment of the invention;

25 Figure 12 is a perspective view of a locking plate for use with the case of Figure 11;

15 Figure 13 is a perspective view of a locked storage case of Figure 11 with the locking plate of Figure 12 in position;

30 Figure 14 is a perspective view of a tool for unlocking the locking plate of Figure 13;

35 Figure 15 is a perspective view of the storage case of Figure 13 in position within the unlocking tool of Figure 14; and

Figure 16 is a perspective view of the storage case of Figure 13 in an open condition.

40 Referring to Figures 1 to 4, a storage case shown generally at 10 comprises a top portion 12 and a base portion 14. The top and base portions 12, 14 are formed as a single piece plastic moulding and are  
45 hinged about closed edge 16. The storage case itself comprises an internal hollow rectangular storage portion (not shown) suitable for receiving a video tape.  
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5 The opening edge 18 of the case 10 is formed with a strip 20. This strip  
20 is formed with a dovetail portion 22 and is formed in two halves 21,  
10 23. The top half 21 is attached to the top portion 12 of the storage case  
5 and the bottom half 23 is likewise attached to the bottom half 14. In the  
storage case closed position as shown in Figure 1 both halves 21, 23 of the  
locking strip 20 abut each other along their lengths. A removable L-  
15 shaped locking spline 24 is formed with a dovetail shaped slot 26  
corresponding to the dovetail portion 22 of the storage case 10.

10 Flexible locking clips 28 are formed on the inside of the L-shaped locking  
spline 24. These locking clips 28 are adapted to be securely fitted within  
corresponding slots 30.

25 In use the locking spline 24 is slid onto the locking strip 20 via its open  
15 end 32 and the dovetail slot 26 and portion 22. Once the locking strip 24  
is in place the locking clips 28 are press fitted into the receiving slots 30 to  
30 provide secure location of the spline 24 on the storage case 10.

35 Once the locking strip is in its secured position, the contents of the case  
are not accessible unless the strip 24 is removed by the use of tool adapted  
to fit into the slots 30 and push the clips 28 out of the slots 30 hence  
40 removing the locking strip 24. Such a tool (not shown) would, in use,  
only be available, for example, to the cashier.

25 A second embodiment of the invention is shown in Figures 4 and 5 of the  
45 drawings. Referring to these drawings, storage case 10 comprises an  
opening edge 18. This edge 18 is formed with a locking strip 32 formed  
in two portions 34, 36. Top portion 34 is mounted on the top opening half  
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12 of the storage case 10 and lower portion 36 is formed on the bottom opening half 14. When the storage case is in the closed position both halves of the locking strip 32 abut each other.

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5 Locking strip 32 is formed with a groove 38 in its top portion and a groove 40 formed in its bottom portion. These grooves are shaped so as to be capable of receiving corresponding U shaped portions 44, 46 of locking spline 42. Locking spline 42 is formed in two halves 48, 50. Each half 48, 50 is formed with a flexible locking clip 52.

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In use each half of the spline 42 is positioned over a different end of the strip 32. The two halves are pushed together until the flexible locking clips 52 are securely retained in corresponding locking slots 54. The locking spline halves may only be removed by use of a tool (not shown) formed to locate in locking slots 54 to push the clips 52 out of position.

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Referring to Figures 6 to 8 a storage case 10 again comprises top and base portions 12, 14. Opening edge 18 is formed with a number of L shaped clips 56. These clips 56 are alternately mounted on the opening edges of top and bottom halves 12, 14 of the storage case 10.

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A locking plate 58 comprises two locating walls 60 and a number of rectangular formations 62. Each formation 62 comprises a triangular shaped tooth 64 each shaped to be received in corresponding slots 65 formed in clips 56. In use the locking plate is slid onto the opening edge of the storage case, over the clips 56. The teeth 64 are located in their corresponding slots 65 in a snap fit operation. Once in position on the storage case 10 the locking plate 58 forms a neat flush fit with the video storage case 10.

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5 The locking plate 58, once in position on the storage case 10, may only be removed by depression of the teeth 64 using a suitable removal tool (not shown).

10 5 Now referring to Figures 9 and 10 a storage case 10 is formed with a number of L shaped clips 66. At one end of the opening edge 18 of the storage case, locating members 68 are formed. These enable the locking plate 70 to be slid onto the storage case. Locking plate 70 is formed with 15 a number of teeth 72, corresponding to the number of clips 66. The locking plate 70 is also formed with two flexible clips 74.

20 In use the locking plate 70 is slid onto the opening edge of the storage case and each tooth 72 is located behind a corresponding L shaped clip 66.

25 15 The flexible clips 74 slide over the locating members and position the locking plate in a snap fit type operation.

30 Once the locking plate 70 is in position on the storage case 10, the flexible clips 74 abut the locating members 68 thus preventing movement of the locking plate in a direction parallel to the edge 18 of the storage case 10. 35 The teeth 72 abut their corresponding clips 66 thus preventing the locking plate from being removed in a direction perpendicular to edge 18. Thus removal of the locking plate is difficult without the use of a special tool to depress flexible clips 74.

40 25 Now referring to Figure 11 to 13, storage case 10 comprises a top portion 12 and a base portion 14. The opening edge 18 of the storage case 10 is formed with a moulded end strip. This end strip is formed in two halves 74, 76. When the storage case 10 is in the closed and unlocked position 45 50

5 as shown in Figure 11 the two halves 74, 76 abut each other to form a  
hollow section 80. Each half comprises a number of slots 78 and an  
opening cut out portion 82 to provide easy access for a thumb or a finger  
10 when opening. Slot 80 is formed to receive locking plate 84 as shown in  
5 Figure 12. Locking plate 84 is formed with a number of teeth 86.

15 In use the locking plate 84 is slid into the opening 80 of a closed storage  
case 10 thus ensuring the locking plate 84 cannot be withdrawn without  
use of a special tool. Teeth 86 are located within their corresponding slots  
10 78 thus ensuring the case 10 remains in a closed position. The locking  
20 plate 84 may be removed by depression of the teeth 86 from their slots by  
use of a suitable tool. An example of a suitable tool 88 is shown in  
Figures 14 and 15. A locked storage case with the locking plate 84 in  
25 position is shown in Figure 13.

15 When removing the locking bar all the locking teeth 86 are depressed  
30 simultaneously by the action of protrusions 90 of the locking tool. Thus  
the teeth 86 disengage the case. The locking plate 84 may be withdrawn  
longitudinally through aperture 92 of the locking tool 88 and the  
35 20 protrusions 90 fill the slots 78 of the storage case.

40 Advantageously the positioning of a locking plate over one edge of the  
storage case prevents access unless by use of a release tool. Thus contents  
of the storage cases are provided with improved security. The locking  
25 plates 84 are formed as splines engaging with tabs 93 positioned on both  
45 sides of the storage case hence preventing access to the storage case 10  
without the use of such a special tool to depress relevant formations of  
each embodiment of the invention. It is also envisaged that the storage  
case and locking mechanism of the present invention may be suitable for  
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use as a tamper proof "evidence" case for criminal investigation work.

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CLAIMS

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1. A storage case comprising a top portion and a bottom portion  
5 adapted to abut each other in a closed position, at least one edge of both  
said top portion and bottom portion of said storage container being formed  
with receiving means for receiving a detachable locking member in said  
15 storage case closed position.

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2. A storage case comprising a top portion and bottom portion adapted  
to abut each other in a closed position, a locking member being mounted  
on at least one edge of said closed storage case, said top portion and said  
bottom portion being adapted to receive said locking member wherein at  
25 least one of said storage case, top and bottom portions comprise  
15 formations receivable by said locking member such that said locking  
member and said storage case is locked.

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3. A storage case according to claim 1 wherein said receiving means  
comprise two halves of a dovetail strip adapted to receive a  
35 20 correspondingly shaped slot formed in a locking member

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4. A storage case according to claim 1 wherein said receiving means  
comprises a slot formed with at least one opening for receiving a locking  
member.

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5. A storage case according to claim 4 wherein said slot is formed  
with a plurality of openings adapted to receive formations of a locking  
member in a locked position.

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5 6. A storage case according to claim 2 wherein said locking member  
comprises at least one formation adapted to be received in a corresponding  
aperture formed within said edge of said storage case, in a press fit  
10 operation.

5 7. A storage case according to claim 6 wherein said top and bottom -  
portions comprise a plurality of apertures on one edge, said locking  
15 member comprise a plurality of protrusions being shaped so as to each be  
located within said apertures such that said top portion and said bottom  
20 portion are locked together.

25 8. A storage case according to claims 6 or 7 wherein said locking  
member comprises an elongate strip, said formations being formed on  
both sides of the central axes of said strip.

15 9. A storage case according to claim 1 wherein said receiving means  
comprise a plurality of slots adapted to receive teeth formed in a locking  
30 member.

35 20 10. A storage case according to claim 2 wherein said locking member  
comprises a plurality of teeth received by a plurality of slots formed in  
said top and bottom portions of said locking member.

40 11. A storage case according to claim 2 wherein said locking member  
25 comprises two portions, said portions each including flexible clip means  
adapted to mate with each other such that said two halves are locked  
45 together.

50 12. A storage case according to any one of the preceding claims

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wherein the locking member is adapted to be mountable and detachable  
from said storage case in sliding operation.

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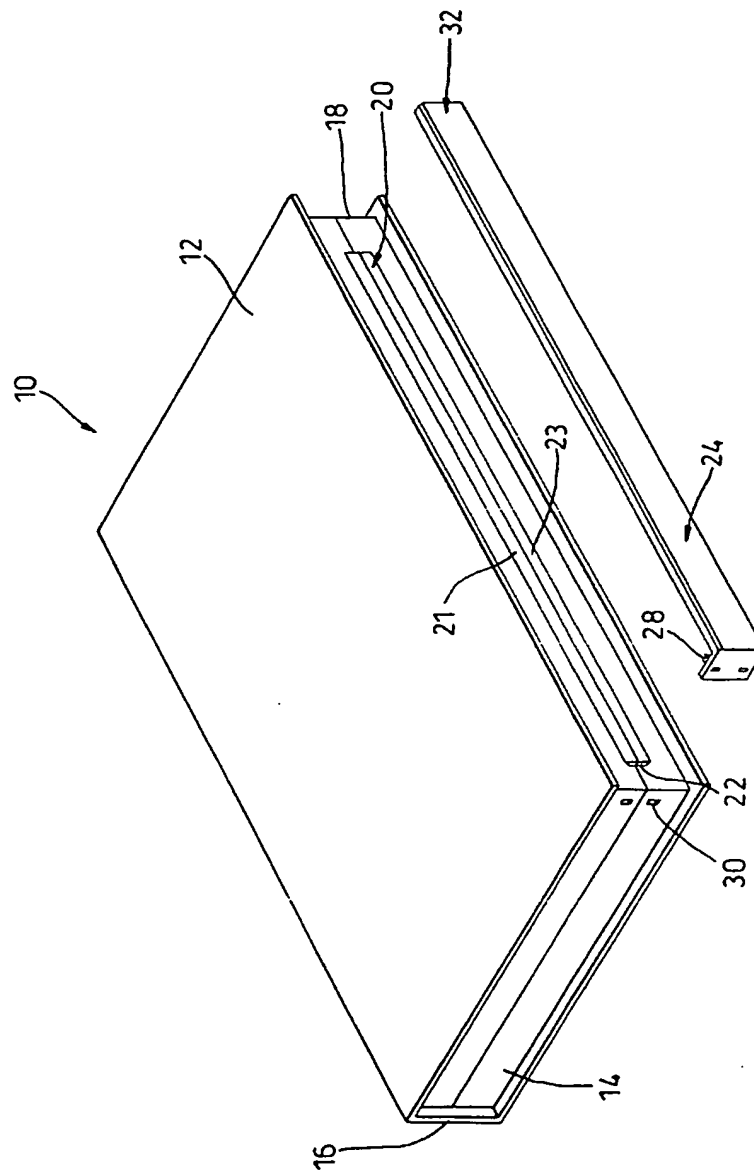
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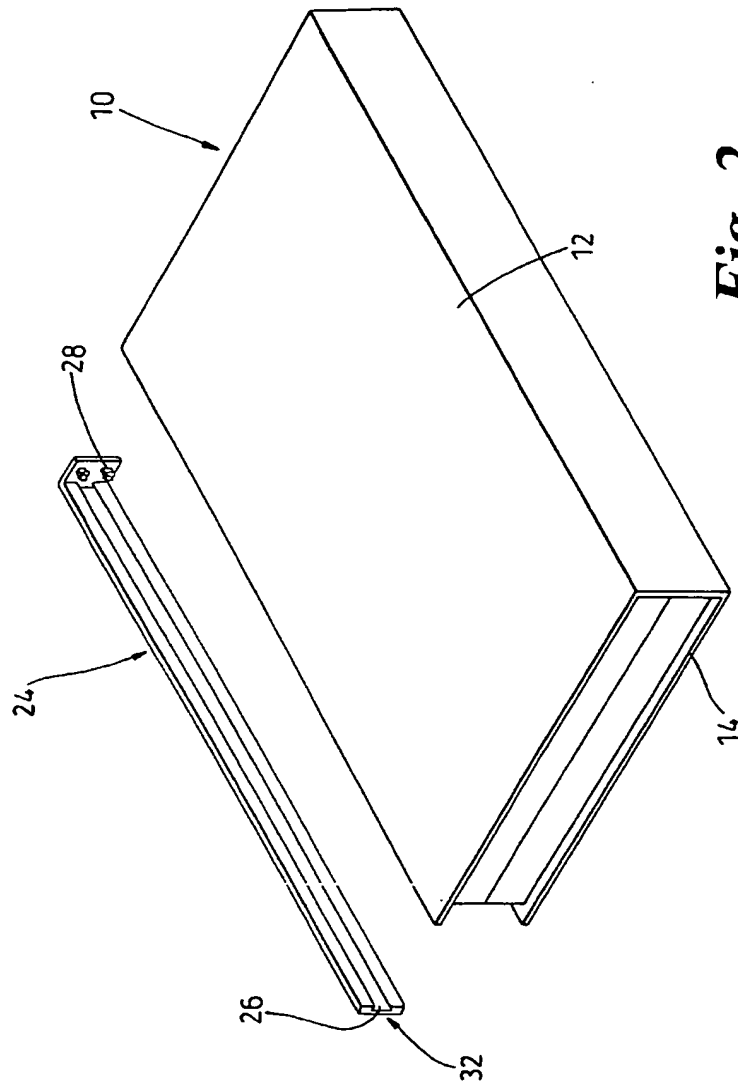
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**Fig. 1**

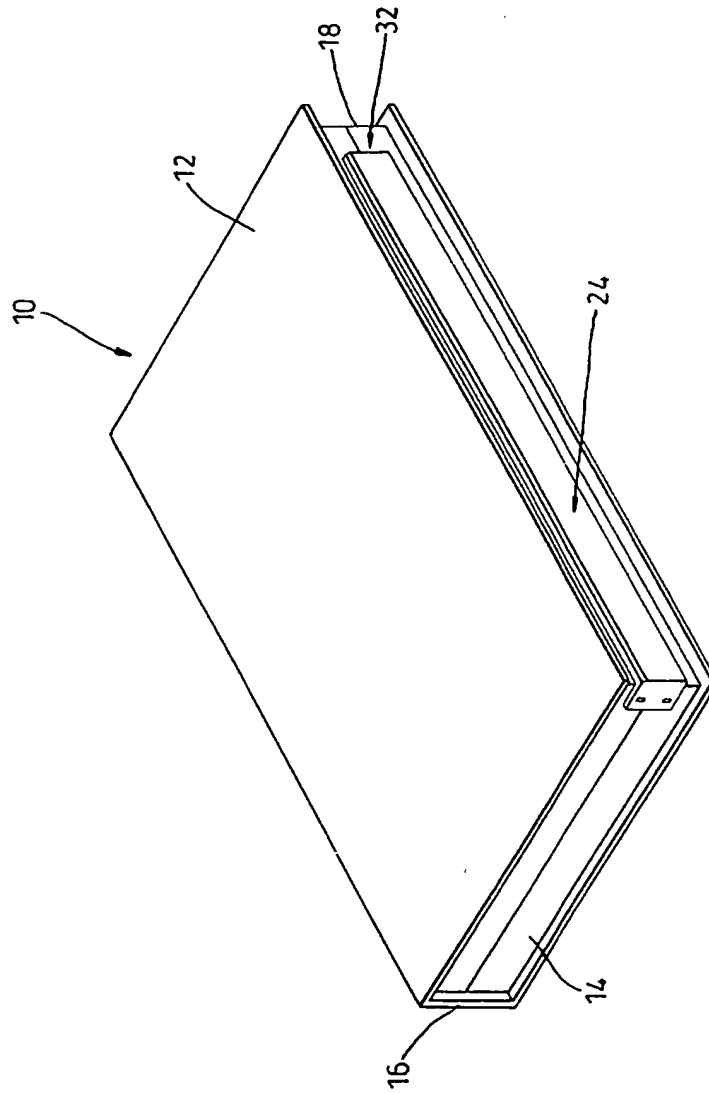
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**Fig. 2**

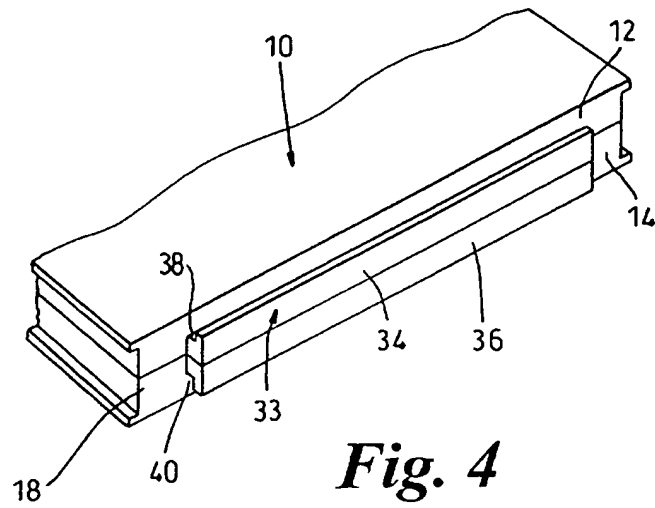
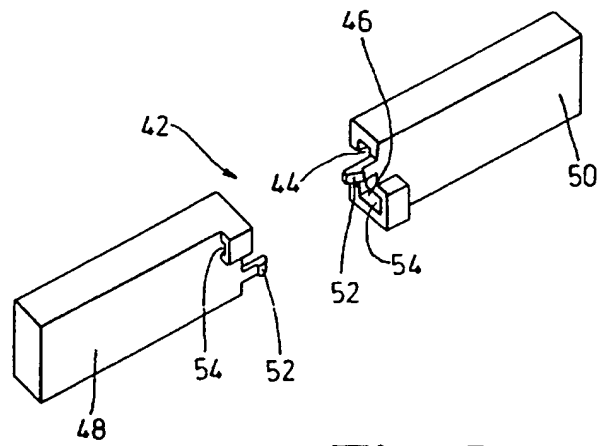


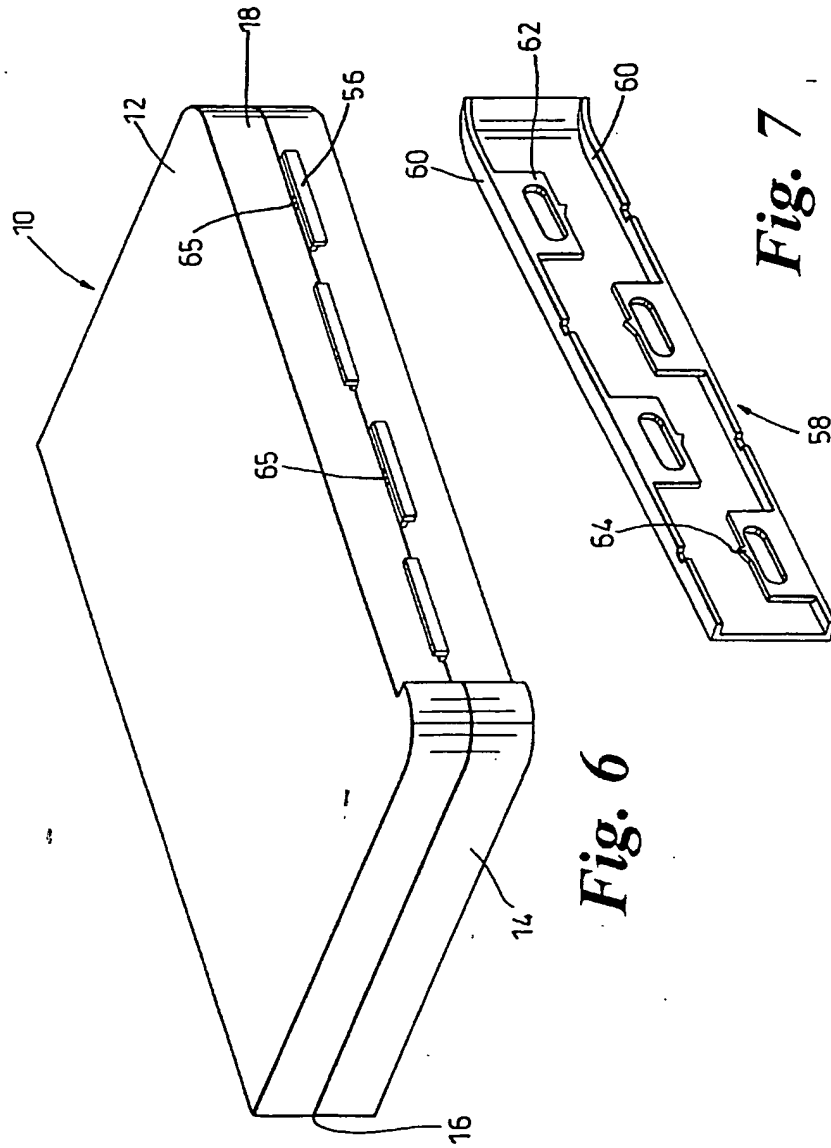
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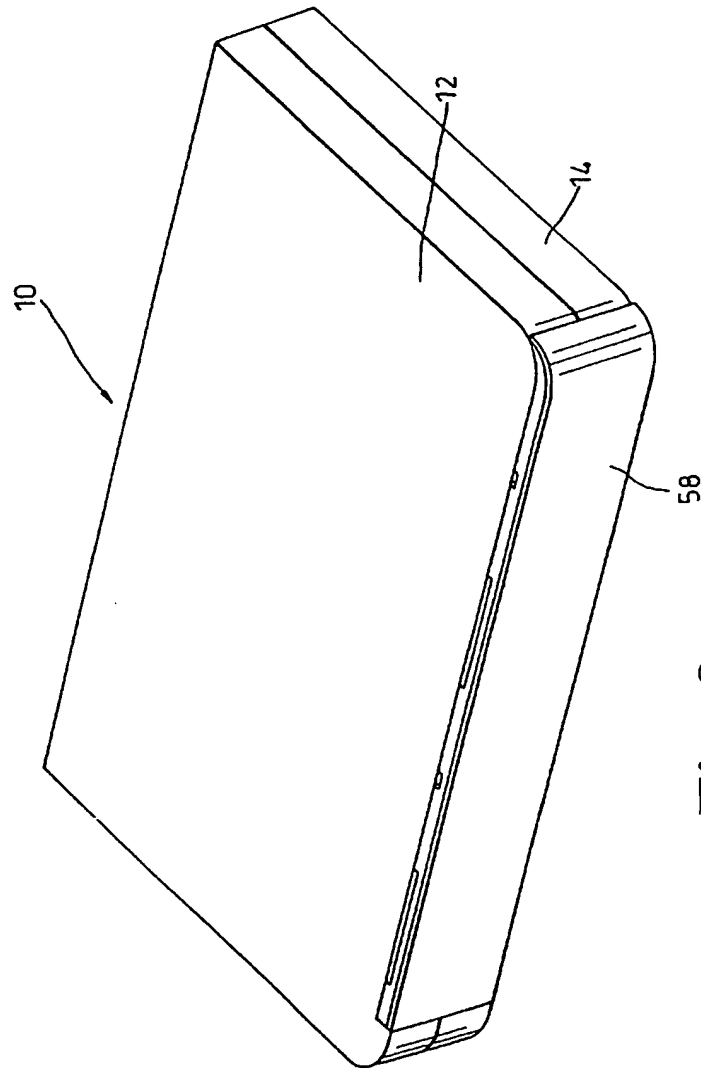
*Fig. 3*

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*Fig. 4**Fig. 5*

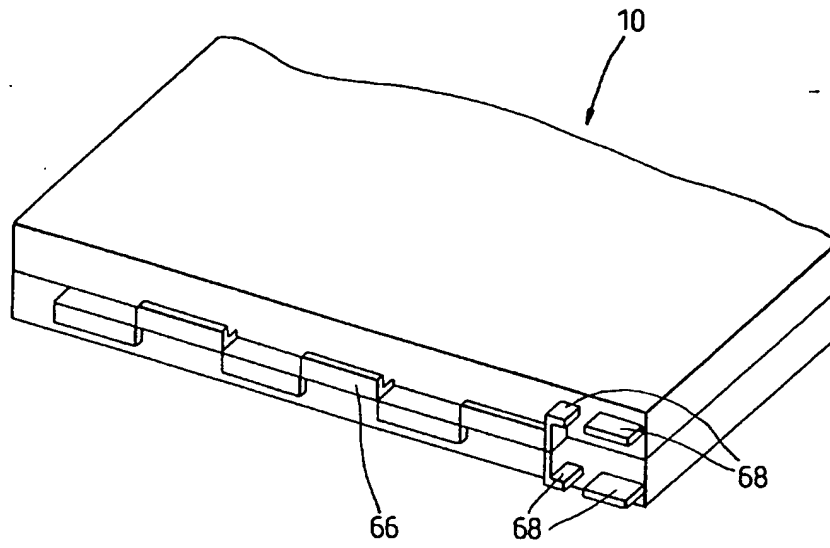


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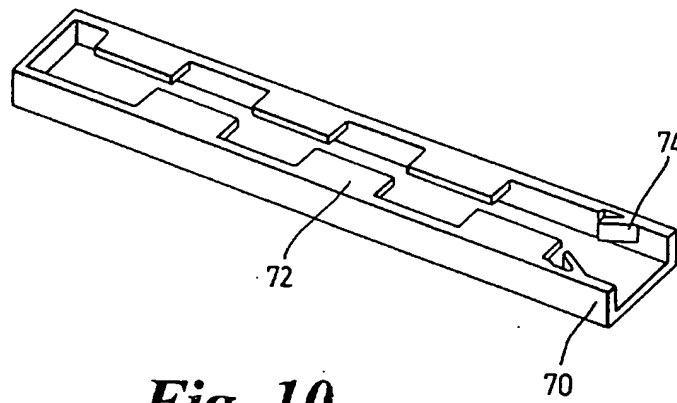


**Fig. 8**

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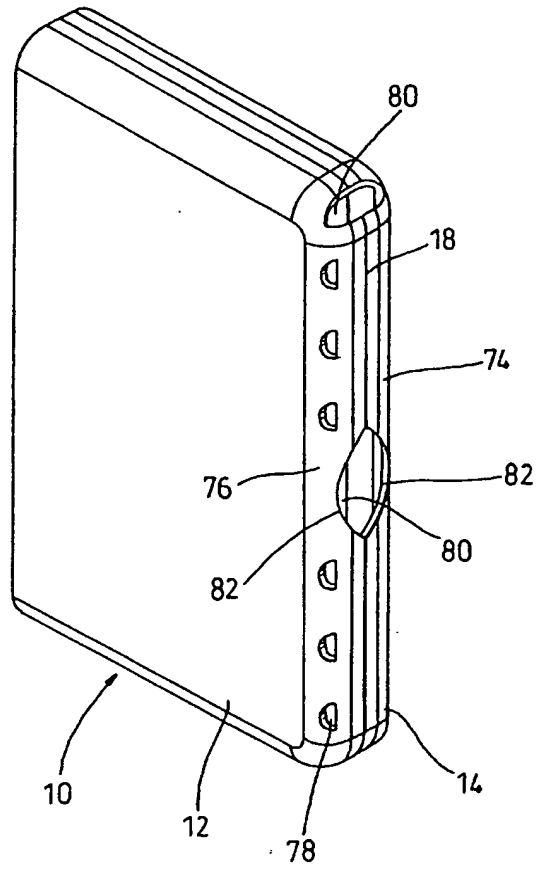


*Fig. 9*

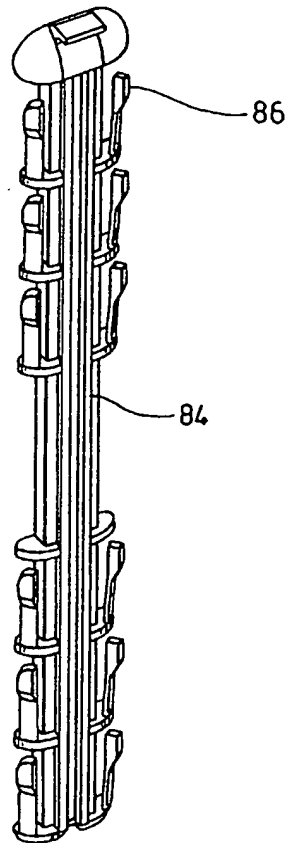


*Fig. 10*

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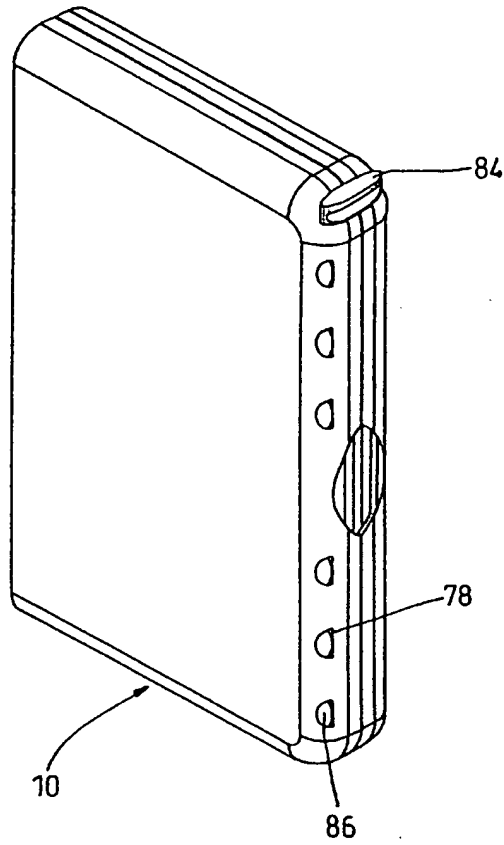
**Fig. 11**

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*Fig. 12*

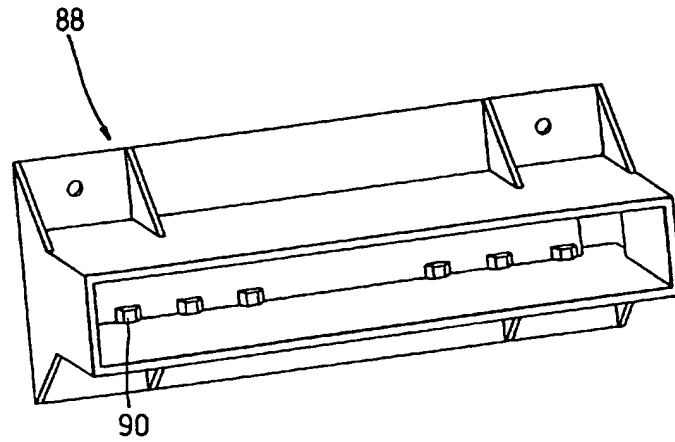
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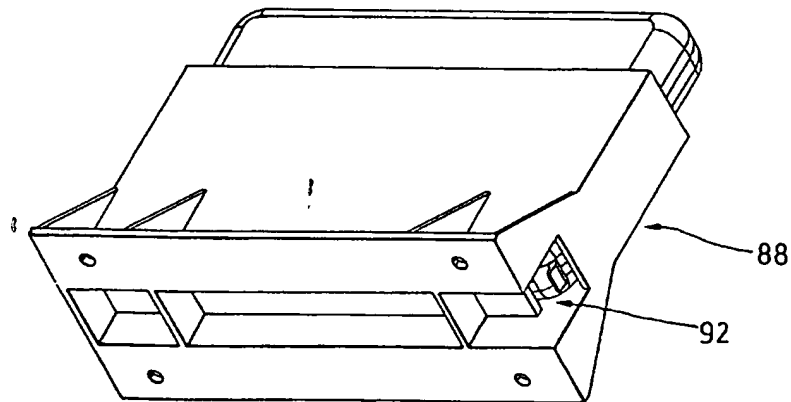
*Fig. 13*



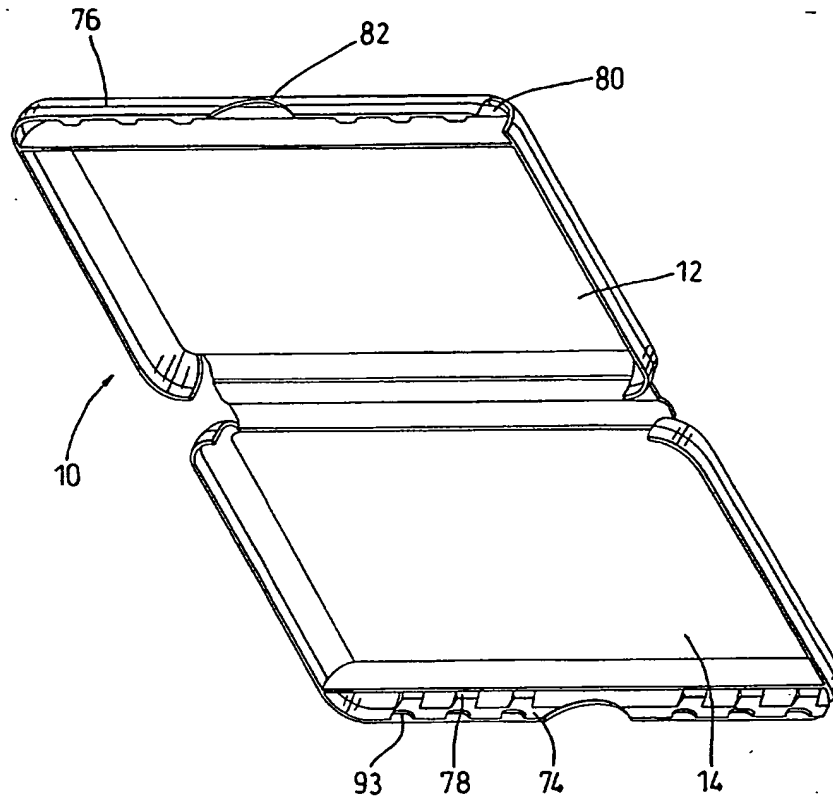
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*Fig. 14*



*Fig. 15*



**Fig. 16**